REMARKS

Prior to this amendment response, claims 14-18 were pending in this application. Claim 14 has been cancelled without prejudice to its future prosecution, claims 15 and 16 have been amended to properly reference dependency from independent claims, and new claims 19 and 20 are submitted herewith. Thus, claims 15-20 are now pending in the application. Support for new claim 20 can be found at page 21, lines 19 to 23.

Applicant notes the acceptance by the Examiner of the new declaration and color photographs and appreciates same. Applicant submits the amendments to claims 15 and 16 as well as new claims 19 and 20 do not require any new searches for the completion of this case as the elements in the claims have been examined previously. Thus, Applicant submits that this case can proceed to allowance upon acceptance of these amendments.

The Examiner has rejected claims 14-18 under 35 U.S.C 102, (b), as allegedly being anticipated by U.S. Patent 3,763,879. The Examiner has noted that amendment of the claim language to make the claimed column device "capable" of binding certain moieties causes the claimed device to not actually include such moieties as a part of the claimed invention. Thus, the Examiner has reasoned that the invention reads on the cited '879 patent. Although applicant traverses the Examiner's argument that the '879 device contains all of the features of the instant invention, Applicant has for clarity reasons amended the call of claim 14 in new claim 19 to include the presence of aAPC or MHC antigen:functional molecule. Due to this amendment Applicant submits that the rejection is now moot and requests that the rejection be withdrawn.

First, Applicant has cancelled claim 14 and replaced it with new claim 19. Support for a column device comprising aAPC or MHC antigen:functional molecule can be found throughout the specification. For example, at page 28, lines 15-18 the specification states that any of the compartments of the column device may comprise solid supports capable of binding irrelevant molecules of aAPC or solid supports that function directly as aAPC as disclosed. Page 28, line 27 to page 29, line 7, discloses that

in the method of modulating T cells a column device can be used wherein T cells combined with aAPC can be passed from one compartment to another. At page 34, lines 5-9, the specification discloses that the aAPC are infused into the column. On page 37, lines 13-15, Fig. 8 description states that the column contains aAPCs. Further, at page 64, lines 6-9 state the column compartments can contain solid supports for immobilizing aAPC or MHC:antigen:functional molecule complexes. On the same page, lines 12-16, the disclosure teaches that T cell population is transferred to compartment A where the T cell can bind to MHC:antigen complexes either directly attached to the solid supports or that are associated with an aAPC bound to the solid support. Further still, on page 64, lines 12-28 disclose that aAPC are attached to solid supports in compartment A and may be released therefrom by temperature shift. Still further, as disclosed on pages 65, lines 1 to page 66, line 8, the T cells captured in compartment A may be recaptured in compartment B and further in compartment C. Finally, at page 97, lines 6-17 the disclosure notes that beads having MHC:peptide complexes can be loaded into a compartment of the column to capture T cells.

Applicant submits that the '879 patent does not anticipate the invention as now claimed. Moreover, none of the references cited previously are applicable to the invention as presently claimed. Given the newly submitted claim 19, Applicant respectfully submits that the claims have been put into condition for their immediate allowance and request the same from the Examiner.

CONCLUSION

In the event that there remains any impediment to prompt allowance of the claims that could be clarified by a telephonic interview, the Examiner is invited to initiate the same with the undersigned attorney for the Applicants.

Respectfully submitted,

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Amended copy of the Claims:

1-14. (Cancelled).

15. (Presently Amended) A column device according to claim ~~14~~ 19 wherein said artificial antigen presenting cell comprises:

a) a liposome comprising a lipid bilayer comprised of neutral phospholipids and cholesterol;

b) at least one GM-1 ganglioside molecule disposed in the lipid bilayer;

c) a choler toxin B subunit bound to a GM-1 ganglioside molecule;

d) an MHC:antigen component wherein said MHC:antigen component is bound to the cholera toxin B subunit; and

e) an accessory molecule that can stabilize an interaction between a T cell receptor and the antigen-loaded MHC component.

16. (Presently Amended) A column device of claim ~~14~~ 19 wherein said multiplicity of compartments are positioned in relation to one another in series, said compartments having a channel interconnecting adjacent compartments, said channels further having a means to isolate said compartments from one another, said compartments further having at least one entrance and at least one exit ports for receiving or expelling, respectively, a flowable medium, said ports further having a means to close said ports to impede said flowable medium.

17. (Original) A column device according to claim 16 wherein at least one of said compartments comprises solid supports capable of binding and immobilizing an artificial APC or alternatively capable of binding directly MHC:antigen:functional molecule complexes

18. (Original) A column device according to claim 17 wherein binding and immobilizing of an artificial APC is by a solid support capable of binding an irrelevant molecule.

19. (New) A column device comprising:

a) a chamber comprising a multiplicity of compartments;

b) in at least one of said compartments a solid support capable of binding either an MHC antigen:functional molecule complex or an artificial antigen presenting cell; and

c) in at least one of said compartments either an MHC antigen:functional molecule complex or an artificial antigen presenting cell.

20. (New) A column device according to claim 15 wherein said accessory molecule is selected from the group consisting of LFA-1, CD11a/18, CD54(ICAM-1), CD106(VCAM), CD49d/29(VLA-4) and antibodies or fragments thereof to ligands for each of LFA-1, CD11a/18, CD54(ICAM-1), CD106(VCAM), and CD49d/29(VLA-4).